Idiopathic laryngotracheal stenosis

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During the past 40 years, Dr Hermes Grillo and his colleagues have established a center for upper airway surgery that is unique in terms of the volume of clinical experience that has been attracted, managed, and clearly reported on. Their referral cases include every significant condition in this relatively esoteric field. Idiopathic laryngotracheal stenosis (ILTS) is infrequently reported and is one of the least understood upper airway pathologies. There are even fewer published reports of successful management by means of resection and primary reconstruction in a single stage. In this issue Ashiku and colleagues[1] describe an extensive and detailed review of 73 patients with ILTS, all managed by means of a 1-stage resection and primary anastomosis between 1971 and 2002.

The classic features of ILTS warrant emphasis. ILTS is a relatively uncommon condition of unknown cause characterized by a nonspecific inflammation of the mucus membrane of the upper airway, which can progress to cicatricial and circumferential stenosis of variable severity. The condition is almost exclusively confined to women (71/73 patients) between 20 and 60 years of age. The authors provide a clear, concise description of the clinical presentation (most commonly dyspnea and wheezing respiration), natural history, differential diagnosis, and surgical pathology. The inflammatory lesion and subsequent cicatricial stenosis is found in the upper airway at the subglottic and upper tracheal levels. On occasion, the inflammation extends to the inferior margin of the vocal cords. Spontaneous resolution was not observed, although progression of subglottic stenosis can progress very slowly over periods of many years.

All 73 patients were operated on at a time in the course of their disease when the acute inflammation had subsided and when symptomatic stenosis was not adequately manageable by means of dilation alone. A single-stage operation consisted of circumferential resection of the upper cervical trachea, which included all or part of the anterior cricoid arch in 63 patients. In 36 of these 63 subglottic resections, the cicatricial process extended high in the subglottis and required a resection close to or abutting the inferior margin of the vocal cords. A flap of posterior membranous trachea was fashioned from the distal tracheal resection margin and used to cover the denuded surface of the posterior cricoid plate, a technique described by Grillo and colleagues in 1982. There were no operative deaths, and good (64%) to excellent (26%) results were obtained in 90% of cases. Importantly, considering the idiopathic cause of this inflammatory process, these favorable results were well maintained in long-term follow-up.

Our Toronto group has had a small experience with the 1-stage surgical management of ILTS. Our observations concerning clinical presentation, natural history, and surgical pathology mirror those reported by Ashiku and colleagues.[1] A few variations in management are noted.

We reported initial experience with 2 cases of ILTS in 1986[2] and with 9 cases of ILTS among a group of 53 patients undergoing a 1-stage cricotracheal resection for subglottic stenosis in 1992.[3] Our original technique of partial cricoid resection, described in 1975,[4] differed from that of Grillo and colleagues in that the subglottic mucosa was divided transversely at the upper line of transection and anastomosed to the distal tracheal margin. Some of the anterior aspect of the posterior cricoid plate was usually rongeured away to widen and facilitate the end-to-end anastomosis. A posterior tracheal mucosal flap was used only in those cases in which the upper resection margin included an interarytenoid scar. Interarytenoid scarring was

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present in only 1 of our 9 reported cases. Good-to-excellent results were achieved and maintained in all 9 patients.

In patients requiring temporary postoperative airway support, we have used a Montgomery T tube as an alternative to a distal tracheostomy tube. The upper tracheal arm of the T tube is placed about 1 cm above the vocal cords because the anastomosis lies within millimeters of the inferior margin of the vocal folds. A T tube has the advantage over an open tracheostomy of providing a closed and well-humidified airway.

We have also had some experience with cricotracheal resection and primary reconstruction in 5 patients with cicatricial subglottic stenosis caused by Wegener granulomatosis.[5] In all 5 instances, the acute inflammatory process had subsided, and the collagen disorder appeared to be well controlled with immunosuppressive medication other than high-dose steroids. In contrast to the unfavorable results in 6 patients reported by Akishu and colleagues,[1] all 5 of our patients were significantly benefited over long-term follow-up.[5]

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